

# TECHNOLOGY @ ROCKY FLATS

## *Chipless Duct Cutter Used To Remove Zone 1 Duct*

A large quantity of highly contaminated cylindrical exhaust duct maintained the negative pressure differential for process equipment, and connected the gloveboxes to the filter plenums. The duct was difficult to remove due to its often-inaccessible location, the difficulty in fixing contamination within the duct, and difficulty in erecting contamination barriers (e.g., soft-sided containment). Saw cutting resulted in a substantial spread of contamination and increases in the level of airborne contamination, as well as higher injury rates from the reciprocating saws. The chipless duct cutter was developed to resolve these difficulties.

The cutter could be operated in a small semi-enclosed contamination control enclosure to minimize contamination spread, due to its proximity to the duct and the relatively low ejection of contamination during cutting (as opposed to a saw blade that moves in and out of the contaminated duct interior). The process used a rotating cutter (similar in principle to a pipe or tube cutter), where knives were rotated around the cylindrical duct until the duct was sectioned off. Limited set up area allowed work to occur in confined or elevated areas such as duct or pipe chases. Round duct was removed in sections convenient for packaging, with duct ends sleeved and tied off – the duct interior was not exposed to the work environment during handling. The technology interacted with rigging and access enhancements such as lift tables, improvements in contamination control enclosures, and improvements in training and procedures.